

# PITOT STATIC TUBES



● Total Pressure

● Static Pressure

● Velocity Pressure

## Ellipsoidal Pitot Static Tube:



### Features:

- Built in directional pointer
- Operates at temperatures of up to 276°C (529°F)
- Sliding marker clips
- Stainless steel construction

With its stainless steel construction and built in directional pointer and marker clips, the Ellipsoidal Pitot Static Tube can be used with any Micromanometer.

### Available Sizes:

- 4 x 300 mm
- 8 x 480 mm
- 8 x 800 mm
- 8 x 1000 mm
- 8 x 1200 mm
- 9.5 x 1520 mm
- 9.5 x 1830 mm

## Easy - Fit Pitot Static Tube:



### Features:

- No rim on the pressure ports
- Operates at temperatures of up to 276°C (529°F)
- Static pressure port acts as a directional pointer
- Sliding marker clips
- Stainless steel construction

The static port acts as a directional pointer, the stainless steel construction is suitable for use at temperatures of up to 276°C (529°F) and the smooth pressure ports allow tubing to be fitted quickly and simply: the Easy - Fit Pitot Static Tube can be used with any Micromanometer.

### Available Sizes:

- 4 x 300 mm
- 8 x 500 mm
- 8 x 750 mm
- 8 x 1000 mm

## Telescopic Pitot Static Tube:



### Features:

- Extends from 200 to 980 mm
- Operates at temperatures of up to 100°C (212°F)

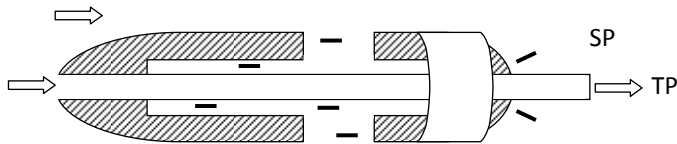
The Telescopic Pitot Static Tube is compact for easy storage and transportation, suitable for use with any Micromanometer and extendable to a maximum length of 980 mm for velocity measurements that would otherwise be inaccessible.

### Dimensions:

- Extended (maximum length) 980 mm
- Compressed (minimum length) 200 mm
- Maximum diameter 13 mm
- Head length 64 mm
- Head diameter 4 mm

**Principle of Operation:**

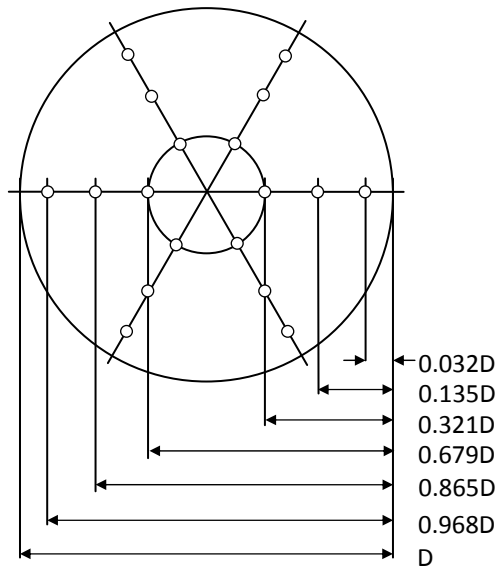
**Pitot Head**



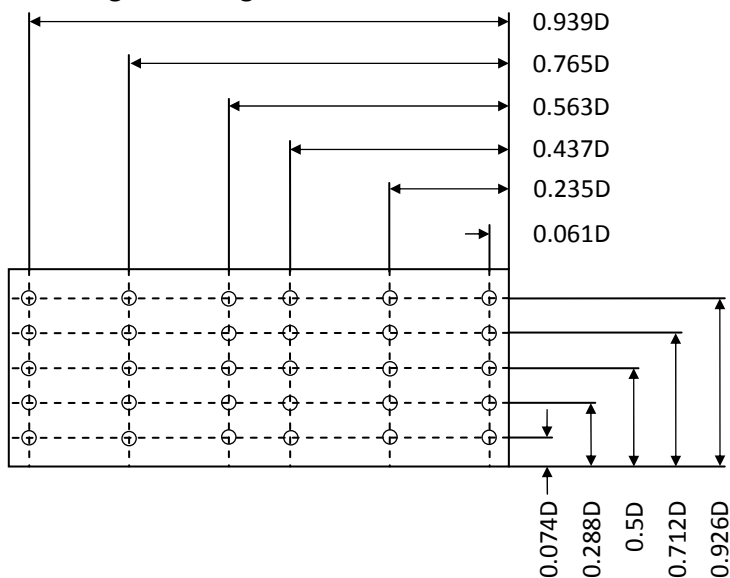
Velocity Pressure\* = Total Pressure – Static Pressure

\*Calculated by the Micromanometer

**Log Linear Rule for Traverse Points on 3 Diameters in a Circular Duct:**



**Alternative Measuring Points and Traverse Lines Relative to Side Lengths for Regular Ducts:**



The nose of the Pitot Tube should face directly into the airstream thus the Total Pressure flows down the inner tube which is connected to the + port.

The static holes are positioned around the side of the Pitot Tube and lead into an outer tube. This is connected to the black tubing which in turn is connected to the – port.

Ideally traverse points should be at least six duct diameters away from any bend or obstruction in the system.

The Pitot Tube should be inserted at right angles to the walls of the ducts and measurements are taken in the positions shown in the diagrams (left).

The directional pointer can be used to ensure that the Pitot Tube head is parallel to the duct walls.

**Air Velocity Calculations using S.I Scales:**

For non-standard air conditions:

V = Velocity in m/sec

PT = Pitot Tube Factor (for Ellipsoidal type 1.000)

B = Barometric pressure in mbar

T = Absolute temperature in °K

(= t in °C + 273 where t = airstream temperature)

Pv = Velocity pressure in Pa

$$V = 1.291 \times PT \sqrt{\frac{1013.25 \times T \times Pv}{B \times 293}}$$

**Air Velocity Calculations using Imperial Scales:**

For non-standard air conditions:

V = Velocity in ft/min

PT = Pitot Tube Factor (for Ellipsoidal type 1.000)

B = Barometric pressure in inHg

T = Absolute temperature in °R

(= t in °F + 460 where t = airstream temperature)

Pv = Velocity pressure in wg

$$V = 4006 \times PT \sqrt{\frac{30 \times T \times Pv}{B \times 528}}$$



In the interest of product development and improvement DP Measurement reserve the right to amend specifications and discontinue models, features and colours of the Ellipsoidal, Easy - Fit and Telescopic Pitot Static Tubes at any time without prior notice.



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